

Factors Influencing the Nutritional Status of Children Under Five Years of Age: A Literature Review

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ABSTRACT

Child malnutrition remains a major public health challenge, particularly in low- and middle-income countries where inadequate nutrition undermines child survival, growth, and development. Purpose: This study examines key factors influencing the nutritional status of children under five through a comprehensive review of empirical evidence. Methods: A literature review was conducted on 18 peer-reviewed international journal articles published between 2019 and 2024. The studies covered regions in Asia, Africa, and Latin America, involving pregnant women and children under five. Variables analyzed included maternal nutritional intake, micronutrient status, body mass index, birth outcomes, and child growth indicators. Results: Findings show that child nutritional status is shaped by multiple interrelated determinants. Child-level factors, particularly low birth weight and age, were strongly associated with stunting and underweight. Maternal education and nutritional status significantly influenced child outcomes, while low household socioeconomic status increased the risk of undernutrition. Inadequate feeding practices, poor dietary diversity, limited access to clean water and sanitation, insufficient healthcare services, and recurrent infections were also consistently linked to poor nutritional status. Implications: These findings emphasize the importance of integrated, multisectoral strategies addressing both nutrition-specific and nutrition-sensitive factors, including maternal health, poverty, feeding practices, environmental conditions, and healthcare access. Conclusion: Improving maternal nutrition during pregnancy is crucial for optimal child growth and development. Future research should prioritize longitudinal and interventional-based studies to strengthen evidence for effective maternal and child health policies.

INTRODUCTION

Child malnutrition remains one of the most persistent and pressing global public health challenges, particularly in low- and middle-income countries where socioeconomic vulnerability, limited access to healthcare, and food insecurity are more prevalent. Malnutrition in children under five years of age encompasses a range of conditions resulting from insufficient intake of energy,

protein, and essential micronutrients, which are critical during early childhood growth and development. The first five years of life represent a sensitive period in which adequate nutrition plays a decisive role in shaping physical growth, cognitive capacity, immune function, and long-term health outcomes (WHO, 2025).

Undernutrition among children under five is strongly associated with increased risks of morbidity and mortality, especially from preventable infectious diseases such as diarrhea, pneumonia, and measles. In addition to immediate health consequences, chronic undernutrition has long-term implications, including impaired cognitive development, delayed motor skills, reduced school performance, lower educational attainment, and diminished economic productivity in adulthood. At the population level, high rates of child malnutrition contribute to intergenerational cycles of poverty and hinder national development efforts. Recognizing its magnitude and complexity, the World Health Organization identifies stunting, wasting, and underweight as the primary indicators of chronic and acute nutritional deficiencies affecting millions of children worldwide (WHO, 2025). These indicators not only reflect individual health conditions but also signal broader structural inequalities related to income distribution, education, environmental sanitation, and access to essential services.

A growing body of empirical literature has explored the multifactorial determinants of nutritional status among children under five. Evidence consistently demonstrates that maternal characteristics play a pivotal role in shaping child nutrition outcomes. Maternal education, household socioeconomic status, and maternal nutritional condition during pregnancy and lactation are among the most frequently cited determinants (Abua et al., 2025). Mothers with higher educational attainment tend to possess better knowledge of child feeding practices, hygiene behaviors, and healthcare utilization, which positively influence child growth and nutritional status. Conversely, children born to mothers with low education levels and inadequate nutritional intake face a significantly higher risk of stunting, wasting, and underweight conditions (Bayraktar et al., 2025).

Beyond maternal factors, infant and young child feeding practices have been widely recognized as critical determinants of child nutritional status. Practices such as exclusive breastfeeding during the first six months of life, timely initiation of complementary feeding, adequate meal frequency, and dietary diversity are strongly associated with improved nutritional outcomes (Ernawati et al., 2025). Inappropriate feeding practices, including early cessation of breastfeeding or poor-quality complementary foods, increase children's vulnerability to nutrient deficiencies and growth faltering. Furthermore, environmental and contextual factors including access to clean drinking water, improved sanitation facilities, and quality healthcare services substantially influence child nutrition by shaping disease exposure and nutrient absorption (Sunday et al., 2024). Children living in environments with poor sanitation and limited healthcare access are more susceptible to repeated infections, which exacerbate undernutrition through reduced appetite and impaired nutrient utilization.

Despite the extensive literature on child malnutrition, several important limitations persist. Many existing studies are confined to specific geographic locations, rural settings, or vulnerable subpopulations, which restricts the generalizability of findings across different contexts and regions (Prasetyo et al., 2023). Additionally, numerous studies focus on isolated determinants of child



nutritional status without adequately accounting for the complex interactions between socioeconomic conditions, maternal characteristics, feeding practices, and environmental factors (Abua et al., 2025). Variations in study design, measurement approaches, and nutritional indicators further contribute to inconsistent and sometimes contradictory conclusions in the existing evidence base. These methodological differences highlight the need for a comprehensive synthesis that integrates findings across diverse settings and research designs.

In response to these gaps, this study seeks to address the following research question: *What are the key determinants influencing the nutritional status of children under five years of age according to recent international evidence?* The objective of this literature review is to systematically synthesize findings from recent open-access international studies to identify the dominant determinants of child nutritional status, including maternal factors, household socioeconomic conditions, feeding practices, and environmental influences. The novelty of this study lies in its integrative approach, which combines evidence from multiple regions and methodological perspectives to provide a holistic and policy-relevant understanding of the drivers of child malnutrition. By offering a comprehensive synthesis of recent evidence, this review aims to inform future research directions and support the development of effective nutrition interventions and public health policies targeting children under five years of age.

METHODS

This study employed a literature review approach to systematically synthesize international empirical evidence on factors influencing the nutritional status of children under five years of age. Relevant peer-reviewed articles were identified through open-access databases, including ScienceDirect, PubMed, Emerald Insight, and Google Scholar, using predefined keywords such as *nutritional status*, *children under five*, *child malnutrition*, *stunting*, *wasting*, *underweight*, and *determinants*. The review included English-language studies published between 2019 and 2024 that examined nutritional outcomes among children under five and their associated maternal, socioeconomic, feeding practice, and environmental determinants, while review articles, editorials, and studies lacking clear nutritional indicators were excluded. Article selection was conducted through sequential screening of titles, abstracts, and full texts, and relevant data were extracted using a structured extraction framework covering study characteristics and key findings. The selected studies were analyzed using a narrative synthesis approach by grouping evidence into major determinant categories and systematically comparing patterns and discrepancies across studies. As this study relied exclusively on secondary data from publicly available sources, ethical approval was not required, and all materials and data used in this review are accessible to readers.

RESULTS

1. Child-Level Determinants

The reviewed literature consistently demonstrates that child-level characteristics constitute fundamental determinants of nutritional outcomes among children under five years of age. Across diverse study designs and geographic settings, individual child attributes were found to exert a substantial influence on growth trajectories and nutritional status indicators, particularly stunting, wasting, and underweight (Anastasia et al., 2023). These findings indicate that biological and

developmental factors inherent to the child interact with broader environmental and social conditions to shape nutritional outcomes during early childhood.

One of the most frequently reported child-level determinants is birth weight. Children born with low birth weight were consistently shown to face a significantly higher risk of adverse nutritional outcomes during infancy and early childhood. Low birth weight reflects suboptimal intrauterine growth and is often associated with maternal undernutrition, inadequate antenatal care, and pregnancy-related complications. Evidence across multiple contexts indicates that children who begin life with compromised growth reserves are more vulnerable to subsequent growth faltering, particularly in environments characterized by food insecurity and limited healthcare access. This vulnerability manifests in a higher prevalence of stunting and underweight, suggesting that nutritional disadvantages established at birth often persist throughout early childhood (Nielsen et al., 2025).

Child age also emerged as a critical determinant of nutritional status. Several studies reported a clear age-related gradient in the prevalence of malnutrition, with older children, particularly those aged 12–23 months and 24–59 months exhibiting higher rates of stunting compared with younger infants (Januariana et al., 2025). This pattern reflects the transitional nature of early childhood, especially the period following exclusive breastfeeding when children become increasingly dependent on complementary foods. Inadequate dietary quality, inappropriate feeding frequency, and increased exposure to infectious diseases during this developmental stage contribute to cumulative nutritional deficits. As children grow older, prolonged exposure to these risk factors exacerbates growth impairment, resulting in chronic malnutrition that is more difficult to reverse. In addition to birth weight and age, sex differences were reported in several studies, with male children often showing a slightly higher susceptibility to undernutrition than females (Prasetyo et al., 2023). Although the underlying mechanisms remain multifactorial, biological vulnerability, differential care practices, and cultural norms have been suggested as contributing factors. Furthermore, child morbidity, including recurrent illness episodes, was frequently linked with poor nutritional status, highlighting the bidirectional relationship between health and nutrition at the individual level.

Overall, the evidence underscores that child-level determinants play a foundational role in shaping nutritional outcomes. These factors not only exert direct effects on growth but also interact with maternal care, household resources, and environmental conditions, reinforcing the need to consider child characteristics within a broader ecological framework when addressing malnutrition among children under five.

2. Maternal Determinants

Maternal determinants were consistently identified as among the most influential factors affecting the nutritional status of children under five years of age. The reviewed studies highlight that mothers play a central role in determining child nutrition through biological, behavioral, and socioeconomic pathways (Prasetyo et al., 2023). Maternal education, nutritional status, and caregiving capacity collectively shape feeding practices, healthcare utilization, and overall child well-being. Maternal education emerged as one of the most robust predictors of child nutritional outcomes. Children born to mothers with lower levels of formal education were consistently found



to be at greater risk of stunting, wasting, and underweight. Education influences child nutrition through multiple mechanisms, including improved knowledge of appropriate feeding practices, hygiene behaviors, and disease prevention strategies. Educated mothers are generally more capable of understanding nutritional information, recognizing signs of illness, and accessing available health services. Conversely, limited educational attainment often constrains a mother's ability to adopt optimal childcare practices, thereby increasing the likelihood of inadequate nutrition during critical growth periods (Kassie & Workie, 2020).

Maternal nutritional status was another key determinant identified across numerous studies. Indicators such as maternal body mass index, weight, and overall nutritional adequacy were strongly associated with child growth outcomes. Mothers experiencing undernutrition were more likely to give birth to low birth weight infants, initiating a cycle of nutritional vulnerability that extends into early childhood. Additionally, maternal nutritional deficiencies during lactation can affect the quality and quantity of breast milk, further influencing infant growth and development. These findings emphasize the intergenerational nature of malnutrition, whereby maternal health directly affects child nutritional status (Prasetyo et al., 2023).

Beyond education and nutritional status, maternal knowledge and caregiving practices were also highlighted as significant determinants. Mothers with greater awareness of infant and young child feeding guidelines were more likely to implement appropriate breastfeeding and complementary feeding practices (Prasetyo et al., 2023). This knowledge translated into improved dietary diversity, adequate meal frequency, and better overall nutritional outcomes among children. Conversely, limited maternal knowledge was associated with suboptimal feeding behaviors, delayed introduction of complementary foods, and inadequate dietary quality. Collectively, these findings underscore the pivotal role of maternal determinants in shaping child nutritional outcomes. Maternal education and nutritional status not only influence child health directly but also serve as mediating factors that affect household decision-making, resource allocation, and health-seeking behaviors. Strengthening maternal capacity therefore remains a critical component in efforts to reduce malnutrition among children under five (Prasetyo et al., 2023).

3. Household Socioeconomic Determinants

Household socioeconomic conditions were consistently identified as strong determinants of nutritional status among children under five years of age (Kumar, 2008). Across diverse settings, low household income, poor wealth index, and economic insecurity were closely associated with increased risks of stunting, wasting, and underweight. These findings highlight the structural nature of child malnutrition, emphasizing that nutritional outcomes are deeply embedded within broader socioeconomic contexts (Abua et al., 2025). Household income and wealth status influence child nutrition primarily through access to food, healthcare, and living conditions. Families with limited financial resources often struggle to provide sufficient quantities of nutritious foods, particularly those rich in protein and essential micronutrients. As a result, children in low-income households are more likely to experience inadequate dietary intake, leading to growth faltering over time. Economic constraints also limit access to healthcare services, including preventive care and timely treatment of illness, further exacerbating nutritional vulnerability (Al-Fayez et al., 2025).

Household size and composition were also identified as important predictors of child nutritional outcomes. Larger households, particularly those with multiple young children, were associated with higher risks of undernutrition. In such contexts, limited household resources must be distributed among a greater number of dependents, reducing per-child food availability and caregiving attention. This resource dilution effect is especially pronounced in low-income households, where even minor increases in household size can significantly affect child nutrition.

4. Feeding Practices and Dietary Determinants

Feeding practices and dietary factors emerged as central determinants of nutritional status among children under five years of age. Across both international and national studies, appropriate infant and young child feeding practices were consistently associated with improved growth outcomes, while suboptimal practices were linked with increased risks of stunting and underweight. Exclusive breastfeeding during the first six months of life was widely recognized as a protective factor against malnutrition (Al-Fayez et al., 2025). Children who were not exclusively breastfed were more likely to experience inadequate nutrient intake and increased exposure to infectious diseases, both of which negatively affect growth. Breastfeeding provides essential nutrients and immunological protection, supporting optimal growth during early infancy.

Complementary feeding practices also played a crucial role in determining nutritional outcomes beyond the breastfeeding period. Timely introduction of complementary foods, adequate meal frequency, and dietary diversity were consistently associated with better nutritional status. In contrast, inadequate dietary diversity characterized by limited consumption of nutrient-dense foods such as animal-source products, fruits, and vegetables was a common risk factor for undernutrition (Fahey et al., 2025). Children consuming monotonous diets dominated by staple foods were more likely to experience micronutrient deficiencies and growth impairment. Maternal knowledge and attitudes toward feeding significantly influenced dietary practices. Mothers with greater understanding of nutritional requirements were more likely to provide balanced and age-appropriate meals, resulting in improved nutritional outcomes. Conversely, limited knowledge and cultural feeding practices that prioritize quantity over quality often contributed to inadequate nutrient intake (Faghfoury et al., 2025).

5. Environmental and Health Service Determinants

Environmental conditions and access to health services were consistently identified as important determinants of child nutritional status. Poor sanitation, limited access to clean drinking water, and inadequate healthcare services were strongly associated with higher prevalence of malnutrition across multiple contexts. Households lacking access to clean water and improved sanitation facilities were more likely to experience higher rates of stunting and underweight. Unsanitary living conditions increase exposure to pathogens, leading to recurrent infections that impair nutrient absorption and appetite. Repeated exposure to such conditions contributes to chronic inflammation and growth failure, particularly among young children.

Access to healthcare services also played a significant role in shaping nutritional outcomes. Children from households with limited access to health facilities were less likely to receive preventive services, such as growth monitoring, immunization, and nutrition counseling. Delayed



treatment of illness further exacerbated nutritional deficits, increasing the risk of chronic undernutrition. Overall, the evidence underscores the importance of environmental health and healthcare access in supporting adequate child nutrition. Improvements in water, sanitation, and healthcare infrastructure are essential components of strategies aimed at reducing malnutrition among children under five (Bayraktar et al., 2025).

6. Disease and Infection

Disease and infection emerged as consistent determinants of nutritional status across the reviewed literature. Children who experienced frequent or recent episodes of illness, particularly diarrhea and acute respiratory infections, were more likely to be undernourished. Illness reduces appetite, increases metabolic demands, and interferes with nutrient absorption, creating a direct pathway to growth impairment. Repeated infections were found to have cumulative effects on nutritional status, particularly in settings with limited healthcare access and poor sanitation (Mondéjar Barrios et al., 2025). Children exposed to persistent illness were more likely to experience chronic undernutrition, highlighting the close relationship between health and nutrition during early childhood. In summary, the results demonstrate that child malnutrition is shaped by a complex interplay of biological, maternal, household, dietary, environmental, and health-related factors. These determinants consistently emerged across diverse study settings, reinforcing the multifactorial nature of nutritional status among children under five years of age.

DISCUSSION

The findings of this literature review confirm that the nutritional status of children under five years of age is shaped by a complex and interrelated set of determinants operating at multiple levels. Consistent with the study objective, the results demonstrate that child nutrition cannot be explained by a single factor but rather emerges from the interaction between child characteristics, maternal conditions, household socioeconomic circumstances, feeding practices, environmental factors, and health-related conditions. This multidimensional nature reinforces the need for comprehensive and integrated approaches in addressing child malnutrition.

At the child level, the strong association between low birth weight and poor nutritional outcomes highlights the importance of early-life conditions in shaping growth trajectories. Children who begin life with biological disadvantages are more vulnerable to growth faltering, particularly when exposed to adverse postnatal environments. This finding aligns with broader evidence suggesting that nutritional deficits established during the prenatal and neonatal periods often persist into later childhood. The observed age-related pattern of stunting, with higher prevalence among older children, further underscores the cumulative nature of malnutrition. As children transition from exclusive breastfeeding to complementary feeding, they become increasingly exposed to inadequate diets and infectious diseases, which together contribute to chronic growth impairment. These findings emphasize that nutritional interventions should prioritize not only infancy but also the critical transition periods of early childhood.

Maternal determinants emerged as central drivers of child nutritional outcomes, reinforcing the pivotal role of mothers in shaping child health and development. Maternal education appears to function as a key enabling factor that influences caregiving behaviors, feeding practices, and

healthcare utilization. Mothers with higher educational attainment are generally better equipped to make informed decisions regarding child nutrition and health, which translates into improved growth outcomes. Similarly, maternal nutritional status was found to be closely linked with child growth indicators, reflecting the intergenerational transmission of nutritional disadvantage. Poor maternal nutrition increases the likelihood of low birth weight and compromises the nutritional quality of breastfeeding, thereby extending nutritional vulnerability from mother to child. These findings highlight the necessity of targeting maternal health and education as integral components of child nutrition strategies.

Household socioeconomic determinants further contextualize the nutritional challenges faced by children under five. The consistent association between low household income and undernutrition reflects structural inequalities that limit access to adequate food, healthcare, and healthy living conditions. Economic deprivation constrains household capacity to provide nutritionally diverse diets and timely medical care, thereby increasing children's susceptibility to malnutrition. The influence of household size and composition suggests that resource allocation within families plays a critical role in determining child nutritional outcomes. In households with multiple dependents and limited resources, children may receive insufficient food and caregiving attention, amplifying nutritional risks. These findings underscore that child malnutrition is not solely a health issue but also a manifestation of broader socioeconomic vulnerability.

Feeding practices and dietary factors represent a direct and modifiable pathway influencing child nutritional status. The protective role of exclusive breastfeeding and appropriate complementary feeding practices highlights the importance of early feeding behaviors in supporting optimal growth. Inadequate dietary diversity emerged as a recurrent risk factor, indicating that access to food alone is insufficient without attention to nutritional quality. Maternal knowledge and attitudes toward feeding were shown to significantly shape dietary practices, reinforcing the importance of nutrition education interventions. These findings suggest that improving feeding practices through behavior change communication and community-based education can yield substantial gains in child nutrition.

Environmental and health service determinants further illustrate the close linkage between nutrition, sanitation, and healthcare access. Poor water and sanitation conditions increase exposure to infections, which in turn impair nutrient absorption and appetite. Limited access to healthcare services reduces opportunities for preventive care, growth monitoring, and early treatment of illness, thereby exacerbating nutritional deficits. These results support the growing recognition that improvements in child nutrition require coordinated investments in water, sanitation, and healthcare infrastructure alongside nutrition-specific interventions.

Disease and infection were consistently associated with poor nutritional outcomes, highlighting the bidirectional relationship between illness and malnutrition. Frequent episodes of diarrhea and respiratory infections weaken children's nutritional status by increasing metabolic demands and reducing nutrient intake. Over time, repeated illness contributes to chronic undernutrition, particularly in environments characterized by poor sanitation and limited healthcare access. This interaction emphasizes the need for integrated health and nutrition interventions that address both disease prevention and nutritional support.



Taken together, the findings of this review support the working hypothesis that the nutritional status of children under five is determined by multiple interacting factors rather than isolated influences. The results align with existing conceptual frameworks that emphasize the interplay between biological, behavioral, socioeconomic, and environmental determinants. From a policy perspective, these findings suggest that efforts to reduce child malnutrition should adopt a holistic approach that simultaneously addresses maternal health, household poverty, feeding practices, environmental conditions, and access to healthcare services.

Future research should focus on exploring the interactions among these determinants and identifying context-specific pathways through which they influence child nutrition. Longitudinal studies are particularly needed to capture the dynamic nature of nutritional vulnerability across early childhood. Additionally, further research could examine the effectiveness of integrated interventions that combine nutrition-specific and nutrition-sensitive strategies in diverse settings.

CONCLUSIONS

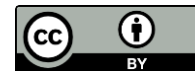
This literature review set out to identify and synthesize key factors influencing the nutritional status of children under five years of age based on recent international and national evidence. The findings demonstrate that child malnutrition is a multifactorial phenomenon shaped by child-level characteristics, maternal determinants, household socioeconomic conditions, feeding practices, environmental factors, and disease exposure. These results are consistent with the expectations outlined in the Introduction and confirm that nutritional outcomes in early childhood are the product of complex and interconnected influences.

The review highlights that interventions aimed at improving child nutritional status must extend beyond food provision alone. Strengthening maternal education and nutritional status, improving household economic conditions, promoting appropriate feeding practices, enhancing access to clean water and sanitation, and ensuring adequate healthcare services are all essential components of effective strategies to reduce malnutrition among children under five. Addressing these determinants in an integrated manner is critical for achieving sustainable improvements in child growth and development.

The findings of this study contribute to the existing body of knowledge by providing a comprehensive synthesis of determinants across multiple contexts and study designs. The results may serve as a reference for policymakers, health practitioners, and researchers in designing and implementing evidence-based interventions. Future studies are encouraged to build upon these findings by examining causal pathways and evaluating integrated approaches to child nutrition, thereby supporting the development of more effective and contextually relevant nutrition policies and programs.

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Growth, Innovation, and Nutrition Science in Indonesia

Vol. 01, No. 1, March 2026

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